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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,755	09/30/2004	Yuichiro Sugita	43890-690	8140

7590 12/13/2005

McDermott Will & Emery
600 13th Street, N W
Washington, DC 20005-3096

EXAMINER

MCCLELLAND, KIMBERLY K

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/509,755	SUGITA ET AL.	
	Examiner	Art Unit	
	Kimberly K. McClelland	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1 and 4-16, drawn to a conductive paste.

Group II, claim(s) 2 and 6-16, drawn to a conductive paste.

Group III, claim(s) 3 and 6-16, drawn to a conductive paste.

Group IV, claim(s) 17, 20-24, and 25-27, drawn to a method of forming a conductive paste.

Group V, claim(s) 18 and 20, drawn to a method of forming a conductive paste.

Group VI, claim(s) 19-20, drawn to a method of forming a conductive paste.

Group VII, claim(s) 28, drawn to a circuit board.

Group VIII, claim(s) 29, drawn to a circuit board manufacturing method.

2. The inventions listed as Groups I - VIII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

- a. Group I contains no special technical features. All the limitations in independent claim 1 can be found in U.S. Patent No. 6,479,763 to Igaki et al., including conductive particles comprising primary particles and agglomerate of primary particles, which are 0.5 to 20 μm in average particle diameter and 0.07 to 1.7 m^2/g specific surface area, and a binder based on thermosetting resin (column 6, lines 65-67, and column 18, lines 48-50). As a result, claim 1 makes

no contribution over the prior art, and consequently lacks a special technical feature.

b. The special technical feature of Group II is a paste containing 0.07 to 1.7 m²/g in specific surface area. The remaining limitations in independent claim 2 can be found in U.S. Patent Application Publication No. 2003/0122257 to Onami et al., including conductive particles of 0.5 to 20 µm in, average particle diameter, having at least two peaks of particle size distribution, and a binder based on thermosetting resin (See Abstract, and paragraphs 0012, and 0020). However, this special technical feature does not link Group II to any of the remaining inventive concepts.

c. Group III contains no special technical features. All the limitations of independent claim 3 can be found in U.S. Patent No. 6,479,763 to Igaki et al., including conductive particles formed by mixing conductive particles of at least two different particle size distributions, and a binder based on thermosetting resin (column 5, lines 38-45, and column 6, lines 6-67). As a result, claim 3 makes no contribution over the prior art, and consequently lacks a special technical feature.

d. The special technical feature of Group IV is a method of measuring agglomeration degree. The remaining limitations in independent claims 17 and 25 can be found in U.S. Patent No. 6,494,931 to Mukuno et al., including measuring primary particle average diameter, adding binder thereto and kneading (column 8, lines 23-29, and lines 39-44). However, this special technical feature does not link Group IV to any of the remaining inventive concepts.

e. Group V contains no special technical features. All the limitations of independent claim 18 can be found in U.S. Patent Application Publication No. 2003/0122257 to Onami et al., including preparing conductive particles having at least two peaks of particle size distribution, and adding a binder thereto and kneading. (See Abstract, and paragraphs 0012, and 0031). As a result, claim 18 makes no contribution over the prior art, and consequently lacks a special technical feature.

f. Group VI contains no special technical features. All the limitations of independent claim 19 can be found in U.S. Patent No. 6,479,763 to Igaki et al., including preparing conductive particles of at least two different particle size distributions, mixing them, and adding a binder thereto and kneading (column 5, lines 38-45, and column 6, lines 6-67). As a result, claim 19 makes no contribution over the prior art, and consequently lacks a special technical feature.

g. Group VII contains no special technical features. All the limitations of independent claim 28 can be found in U.S. Patent Application Publication No. 2001/0005545 to Andou et al., including an insulating board, a plurality of wiring patterns formed on the insulating board, and via-hole conductor electrically connecting the wiring patterns (See paragraphs 0023-0028). As a result, claim 28 makes no contribution over the prior art, and consequently lacks a special technical feature.

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h. Group VIII contains no special technical features. All the limitations of independent claim 29 can be found in U.S. Patent Application Publication No. 2001/0005545 to Andou et al., including affixing releasing film formed with a releasing layer on at least one side thereof to one or both surfaces of an insulating board, making a through-hole for forming via-hole conductor in the insulating board provided with the releasing film, filling conductive paste into the through-hole, and removing the releasing film. (See paragraphs 0023-0028 and 0111-0113). As a result, claim 29 makes no contribution over the prior art, and consequently lacks a special technical feature.

Groups I-VIII are linked by the inventive concept of a conductive paste, however, this concept is not novel, as shown by Igaki et al., Onami et al., Mukuno et al., and Andou et al.

There is no special technical feature in common with two or more of these groups. Each of the above special technical features, where they exist, can be used individually and do not form a linked series in which the effect of one concept depends on first solving the preceding problem. Consequently, each group is technically independent.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly K. McClelland whose telephone number is (571) 272-2372. The examiner can normally be reached on 8:00 a.m.-5 p.m. Mon-Fri..

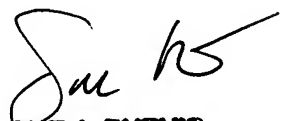
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris A. Fiorilla can be reached on (571)272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KKM



SUE A. PURVIS
PRIMARY EXAMINER